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WESTERN AUSTRALIAN STIGMODERA

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Of all the Coleoptera in Australia the most colourful are the Buprestidae and in that family a beautiful genus is *Stigmodera*. The genus *Stigmodera*, in its wider sense, contains a larger number of species than any other genus of beetles in Australia, also some of our most beautiful species. In its restricted sense there are only eight species; four on either side of the continent. But one of the western species (*sanguinosa*) extends along the southern part of Australia into the west part of Victoria, as far east as Bendigo, where it meets *macularia* Don. Notes on the Western Australian species are given below.

The following diagnosis of the genus *Stigmodera* is extracted from the key, by M. Andre Theary, included in H. J. Carter's "Check List of the Australian Buprestidae" (*The Australian Zoologist*, vol. 5, 1929, pp. 265-304:—

Body depressed. Labrum rather long, or longer than wide, rounded or subaeuminate in front, overlapping the mandibles; mouth produced into a muzzle; mentum wide, rounded. Prosternum flat, or feebly convex, its anterior margin not forming a conical process; process of the posterior margin fitting into the sternal cavity, which it fills. Lateral prolongation of the abdomen hidden; not concealing, or very slightly concealing the metathoracic epimera. Apex of elytra often dentate, but never denticulate. First segment of the posterior tarsi longer than the second; the fifth elongate and longer than the fourth. Female provided with a sessile and unarmed ovipositor.

The genus and its subgenera are separated thus:—

- 1-2 Elytra hollowed out with large foveoles, sometimes (*S. cancellata* Don) striate-cancellate. *Stigmodera*.
- 2-1 Elytra striate or striate-punctate, sometimes with costae.
- 3-4 Tarsal hooks lobed or toothed at base, size generally large. Subgenus *Themognatha*.
- 4-3 Tarsal hooks simple, size generally small.

Subgenus *Castiarina*.

The following descriptions are based on the author's examination of local specimens in his own collection and that of the W.A.

Museum, supplemented by the accounts in Edward Saunders' *Species of the Genus Buprestis* . . . (London, 1870).

Stigmodera sanguinosa Hope, 1846.

Head and thorax green, the lateral margins of thorax golden. Elytra reddish brown, the bottoms of the pits in the elytra covered brilliantly golden. Under, legs and antennae golden copper. Length, 20-27 mm.

I have seen specimens collected from Bullsbrook, Cunderdin, Highbury, Beverley and Busselton. The species has also been collected in South Australia and Western Victoria.

The beetle may be found on the flowers of *Leptospermum*, paper-bark and Christmas Tree. It has been collected during October and November.

Stigmodera roei, Saund., 1868

(= *cancellata* Boisd., 1835; *vescoci* Gehin, 1855).

Above green, sometimes may be a greenish blue. Elytra with margins, apex and three spots on each reddish (sometimes these may be yellow). Of these spots one almost touches the base, the second is a little more than one-third of the entire length of the elytra from the base and the third about one-third of their length from the apex. Underside, legs and antennae coppery green. Head deeply punctured, hairy, with a smooth dorsal line on the vertex. Length, 18-30 mm. The colour varies from a reddish tinge in the north and changes to green and blue further south. Inland the blue variety seems to predominate.

This beautiful beetle has been collected from the Murehison River, Mullewa, Beneubbin, Cunderdin, Bejoording, Balkuling, Speneers Brook, Wembley, Swanbourne and Broomehill.

It is found on a variety of food plants, such as Geraldton Wax, *Melaleuca* and *Leptospermum*. It can be collected in October and November. In the coastal areas it breeds in the Peppermint (*Agonis flexuosa*).

Stigmodera gratiosa Chevrol., 1843

(= *smaragdina* Hope, 1847)

Brilliant golden green all over, in some localities a bluish tinge is evident. Length, 13 to 18 mm.

The most beautiful of the genus. This beetle on a spray of white *Leptospermum* flowers is a wonderful sight.

It is a fairly common insect and has been taken at the following places: Geraldton, Moora, Swan View, Kalamunda, Gosnells, Rockingham, Toodyay, Northam, Beverley, Cunderdin and Lake Grace.

Stigmodera gratiosa can be found in flowers of *Leptospermum* and in some species of *Hakea*. In inland areas it can sometimes be taken whilst feeding on the giant yellow everlasting. There is a sticky substance on the stalk of the plant that the beetles seem to relish. Breeding plants are *Melaleuca* and *Leptospermum*. The adult beetles emerge during September, October and November.

Stigmodera cancellata Don, 1805
(= *dejeani* Hope, 1836; *dejeaneana* Boisd., 1835).

Colour and pattern much the same as in *Stigmodera roei* with the same variations as to blue and yellow varieties. The beetle is, however, much flatter and more elongate than *roei*. The underside is coppery green, thorax coppery green, sometimes purplish, elytra green with six reddish spots. The spots in both *cancellata* and *roei* range in their colour patterns from reddish-orange to blood-red, and the rest of the body from green to blue. Length, 20-34 mm.

This beetle has been taken in the following districts: Northam, Wembley, Bunbury, Busselton, Augusta, Denmark and Albany.

Food plants are Geraldton Wax, *Leptospermum* and Peppermint. In the coastal areas it breeds in Peppermints, the adult beetle emerging during October and November. Some specimens have been collected in December.

EVIDENCE OF A MID-RECENT CHANGE OF SEA-LEVEL AT COTTESLOE

By M. A. CARRIGY AND SHIRLEY CARRIGY, Mosman Park

I.—INTRODUCTION.

The mean sea-level during the Mid-Recent epoch of geological time (3,000 to 5,000 years ago) was 10 to 11 feet higher than it is at present. Fairbridge (1950a) believes that this sea-level in Western Australia was at its highest during the warm "Atlantic" stage of the climate which is well documented in Western Europe. The stable coastline of Western Australia, and the presence of a narrow belt of soft dune limestones, into which each stand of the sea cuts a characteristic notch or undercut (see Figs. 1 and 2) makes it ideal for the study of these eustatic changes in sea-level.

The physiographic features associated with the 10 ft. rise are particularly well preserved along most of our coastline, and were cited as evidence of uplift of the land by Somerville (1921). That they could be correlated with a world wide fluctuation in sea-level was first recognised by Teichert (1950) who made a study of the evidence to be found on Rottnest Island. Supporting evidence from the mainland was brought forward by Fairbridge (1950b) from the Point Peron area.

Three theories as to the origin of the variations in mean sea-level are currently held. The first attributes them to climatic fluctuations, causing varying amounts of water to be withdrawn from the sea and held in polar ice caps. The second to structural changes in the earth's crust, such as raising and lowering of the ocean floors and continents. The third to the displacement of water by sediment brought down by the rivers and deposited in the sea; this, of course, can only account for minor rises in mean sea-level. However, it seems more desirable at the present time to retain a multiple hypothesis than to attempt to ascribe the changing sea-level to any particular cause.